Deltares
Enabling Delta Life

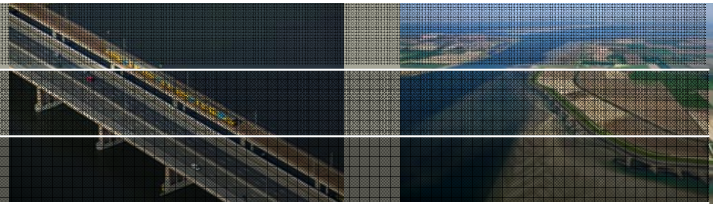
HOlistic Management of Brownfield REgeneration - HOMBRE

www.zerobrownfields.eu

31 oktober 2011

HOMBRE

Contents



What are the key drivers in catalyzing investment in making cities more sustainable?

What are some of the key barriers that need to be overcome or removed for cities to become sustainable?

What are some projects, programs, policies, organizations, etc., that have influenced the market to encourage investment in sustainability cities?

Key Drivers in Catalyzing Investment in Making Cities More Sustainable?

Pressure on land-use and balancing the different uses to enhance the well-being of the population

Urban sprawl creates an expensive infrastructure and ever increasing commuting population

Prevention and re-use of BF's is paramount to reducing our carbon footprint

BF regeneration should not be considered as a stand-alone negative issue, but as part of a **more positive perspective** on a closed land use cycle

Return on investment

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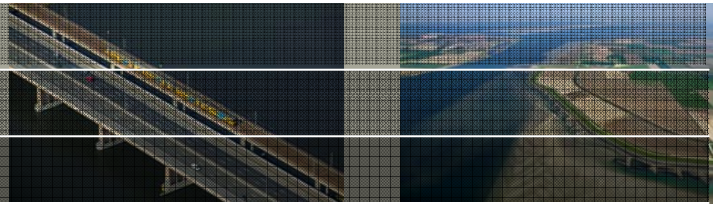
Key barriers



Liability

Negative perception

Lack of confidence, certainty and consistency

Costs and time

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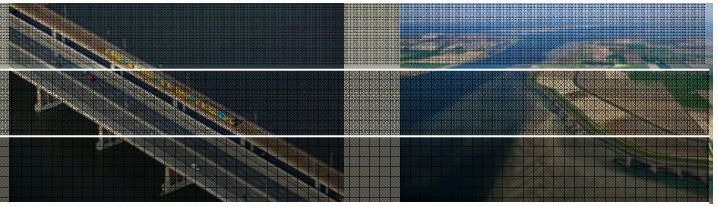
Co-operation



through Netherlands Soil Partnership

Connection in the chain of:

- Policy and law enforcement (G2G)
- Knowledge (K2K)
- Advice & Implementation (B2B)

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Build Confidence in Innovative Technologies

Local authorities and (small) company site owners can feel uncertain about new remediation technologies:

- "On the job learn-and-experience programme for local authorities and site owners with respect to sustainable site remediation".
- Holland In-situ Program:
  - Demonstration projects using In-Situ Technologies and MNA
  - Support on working processes (interactions between site owner-consultant-contractor-local authority-regulating authority)
- Holistic Management of regeneration of Brownfields

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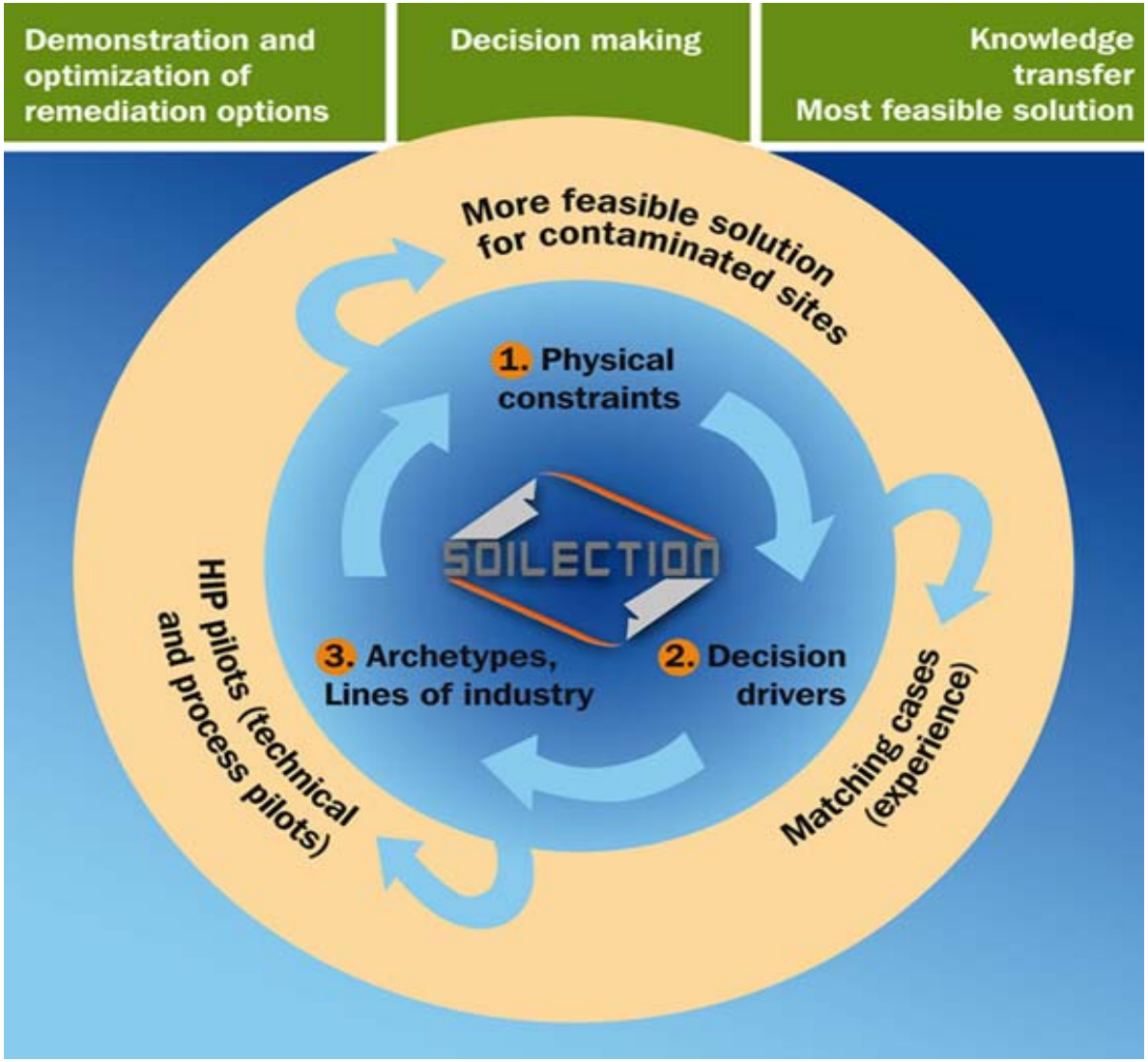

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Influences on the Market to Encourage Investment

Policy support

Business opportunities:

- Recycle soil and treatment
- New and combined in-situ / ex-situ technologies

Market responding to cities sustainability action program

- Area based approach (mega-sites)
- Cost reduction and time saving measures
- Early recognition and uptake

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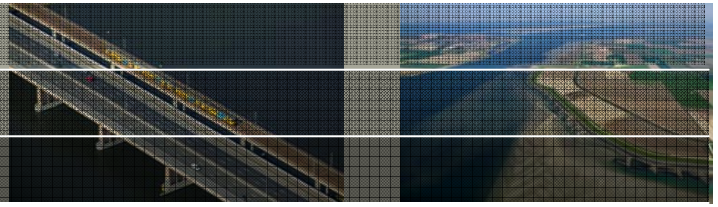
Strategic goals



- Re-use of brownfields in urban, industrial and mining areas
- Preventing an increase in our carbon footprint

Through:

- Better understanding why, how, where and when BF's are formed
- Better planning and more attractive communication technologies
- Better operations, better implementation of state of the art technologies
- More creative solutions for long-term land use of current and potential future BF's.

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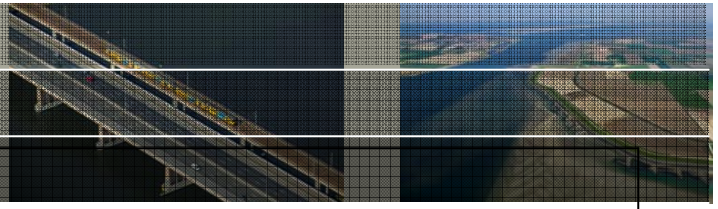
Different types of Brownfields



Type	current characteristics	commonly envisaged new use	specific attention to
Industrial	large sites parts of industrial areas (megasites) situated in city outskirts	industrial areas or for service related and/or commercial activities (warehouses, offices).	soil contamination, underground infrastructures, waste management, transport planning, integration in surroundings
Urban	small, fragmented and heterogeneous sites scattered throughout the city or in specific suburbs	urban, commercial	vicinity of residential areas, space scarcity for installation of treatment facilities, nuisance (air quality, noise, vibrations, traffic congestion), reintegration into local and regional social and economic context
Mining	large sites, relatively remote, often heavily contaminated, landscape scars, economic dependence of local community	no direct new functional use	regeneration into socially and economically viable use

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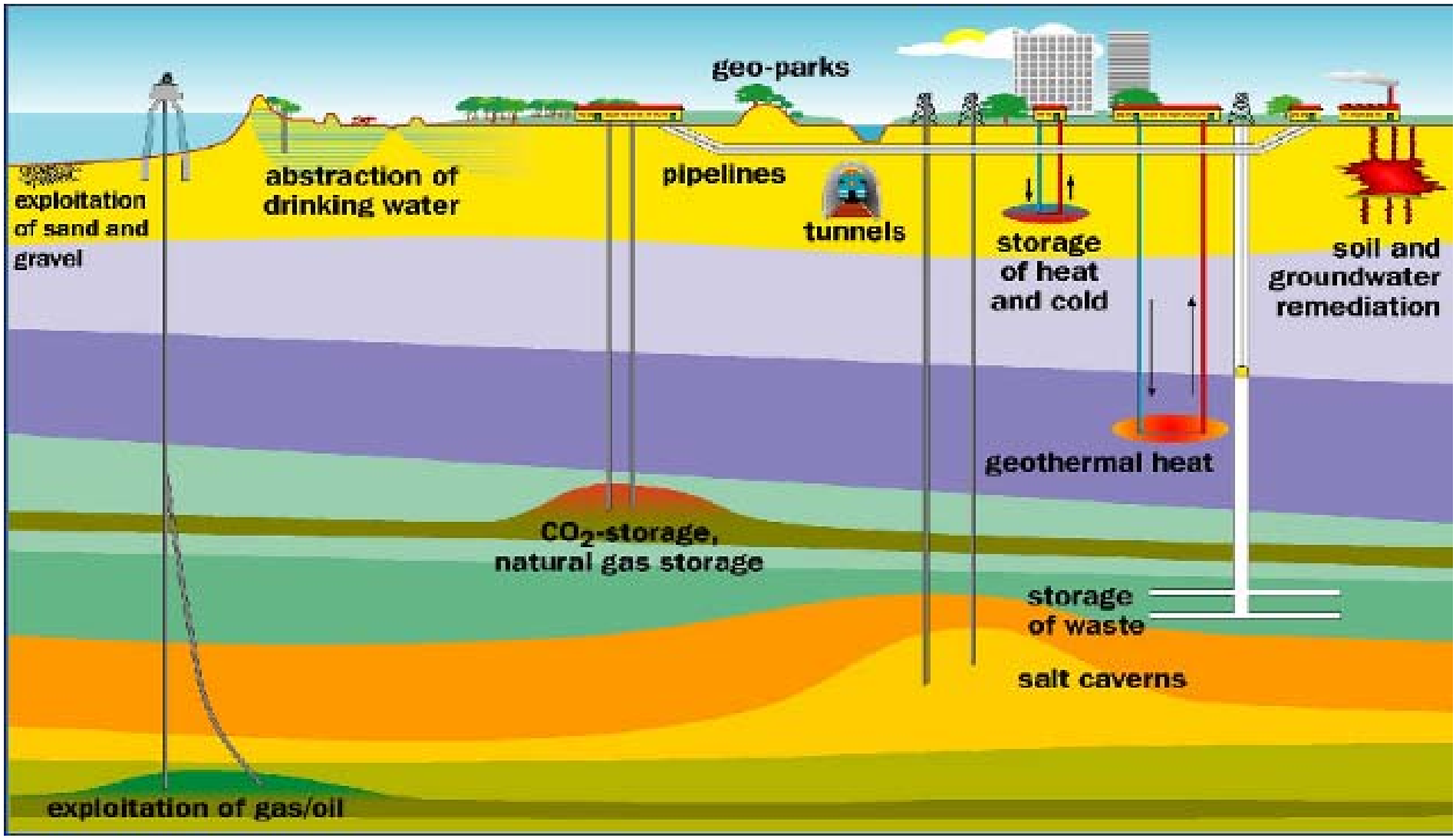
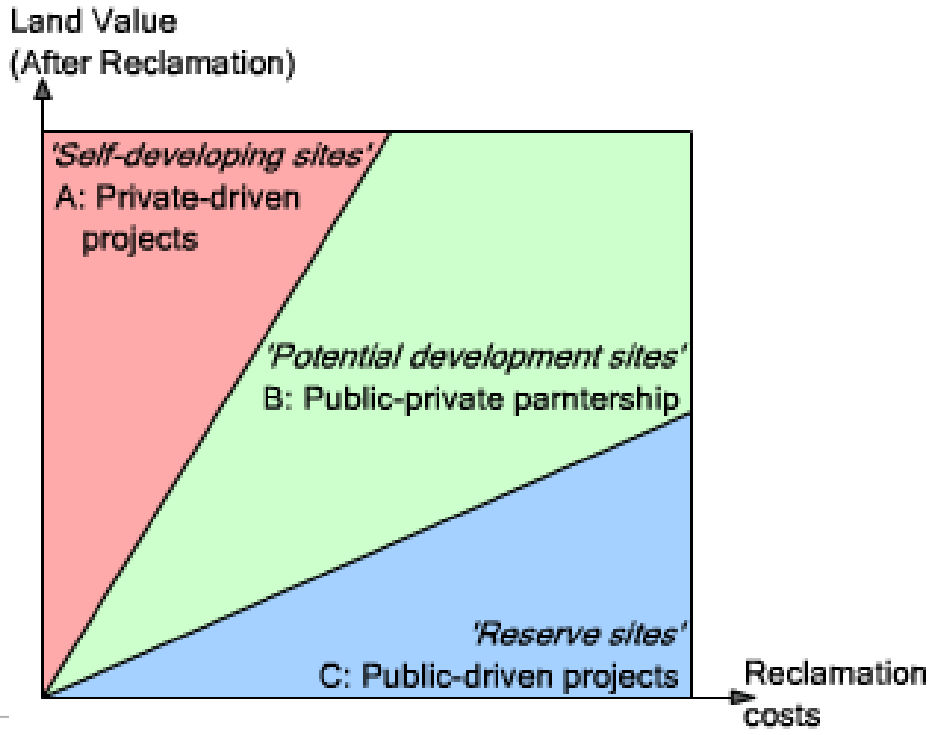
Current Subsurface Activities

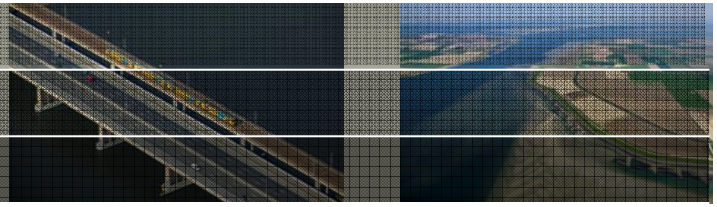


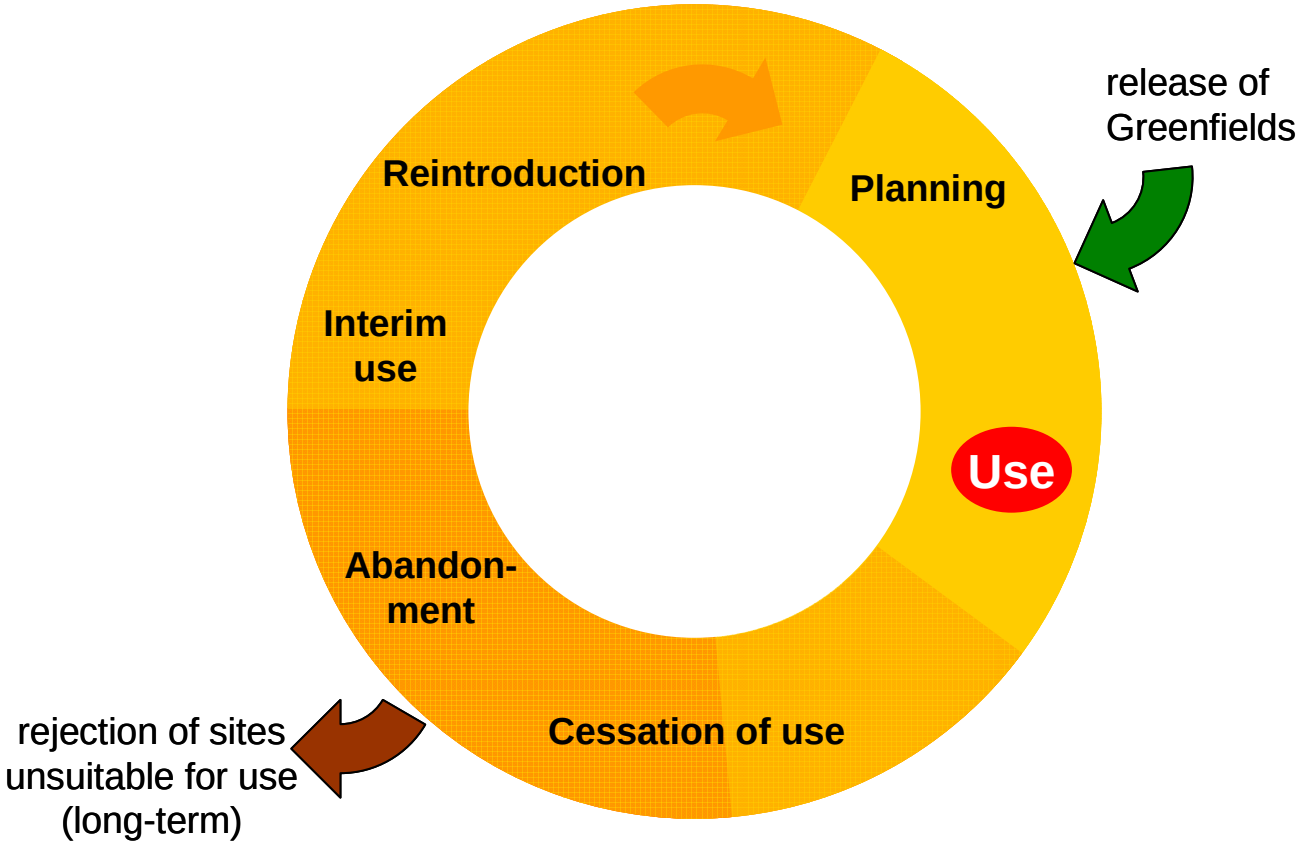
‘Classes’ of BF sites

A. A Sites - are driven by private funding
B. B Sites - on the borderline of profitability. Funded through public-private co-operation or partnerships;
C. C Sites - mainly public sector or municipality projects. Driven by public funding or specific legislative instruments.



Circular Land management





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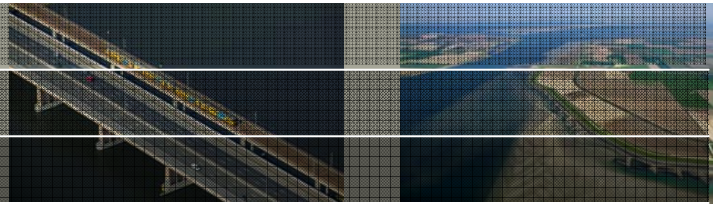
HOMBRE approach



Based on a basic set of concepts:

- Land-use life cycle
- Intermediary land use
- Added value by combining technologies
- Offering synergies between Service - and Brownfield opportunities
- Zero Brownfields

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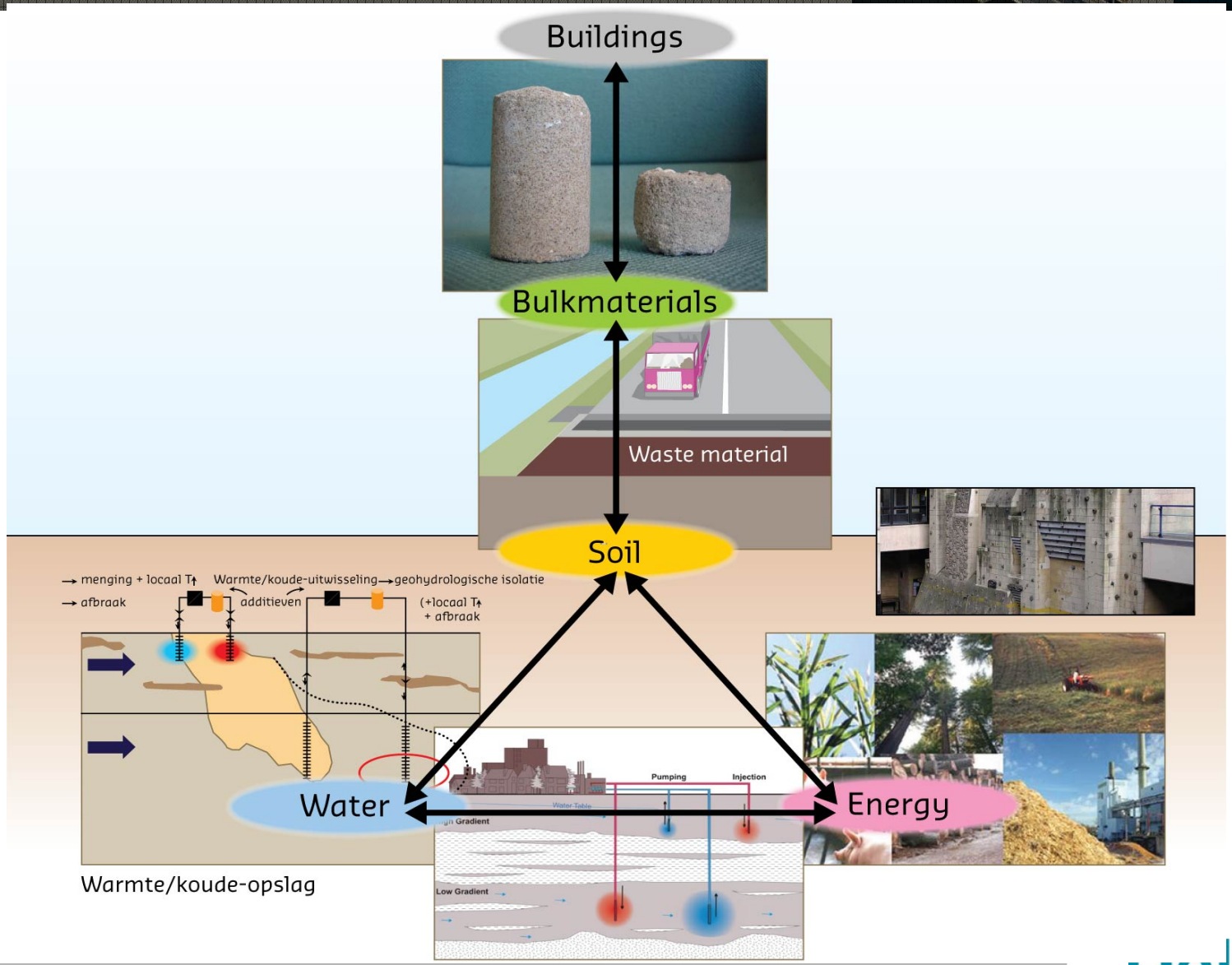
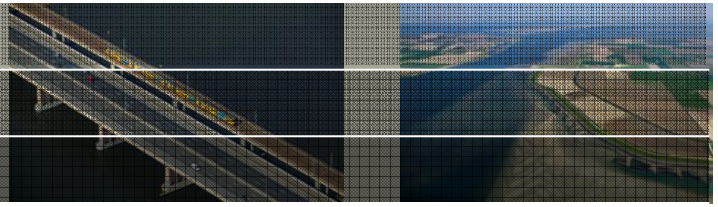
Integral assessment of BF resources and potential



Technology Trains



Train1: Energy and water, where energy re-use and contaminated water restoration are combined

Train 2: Building materials and soil, where resource efficiency and contaminated soil management are combined

Train 3: Soil and water where remediation and sustainable urban drainage and soil capacity building are combined

Train 4: Urban greening and restoration where the benefits of remediation and urban green space are combined

Train 5: Bio-energy and remediation where combining organic matter recycling and bio-energy production provides a solution and a revenue for abandoned land

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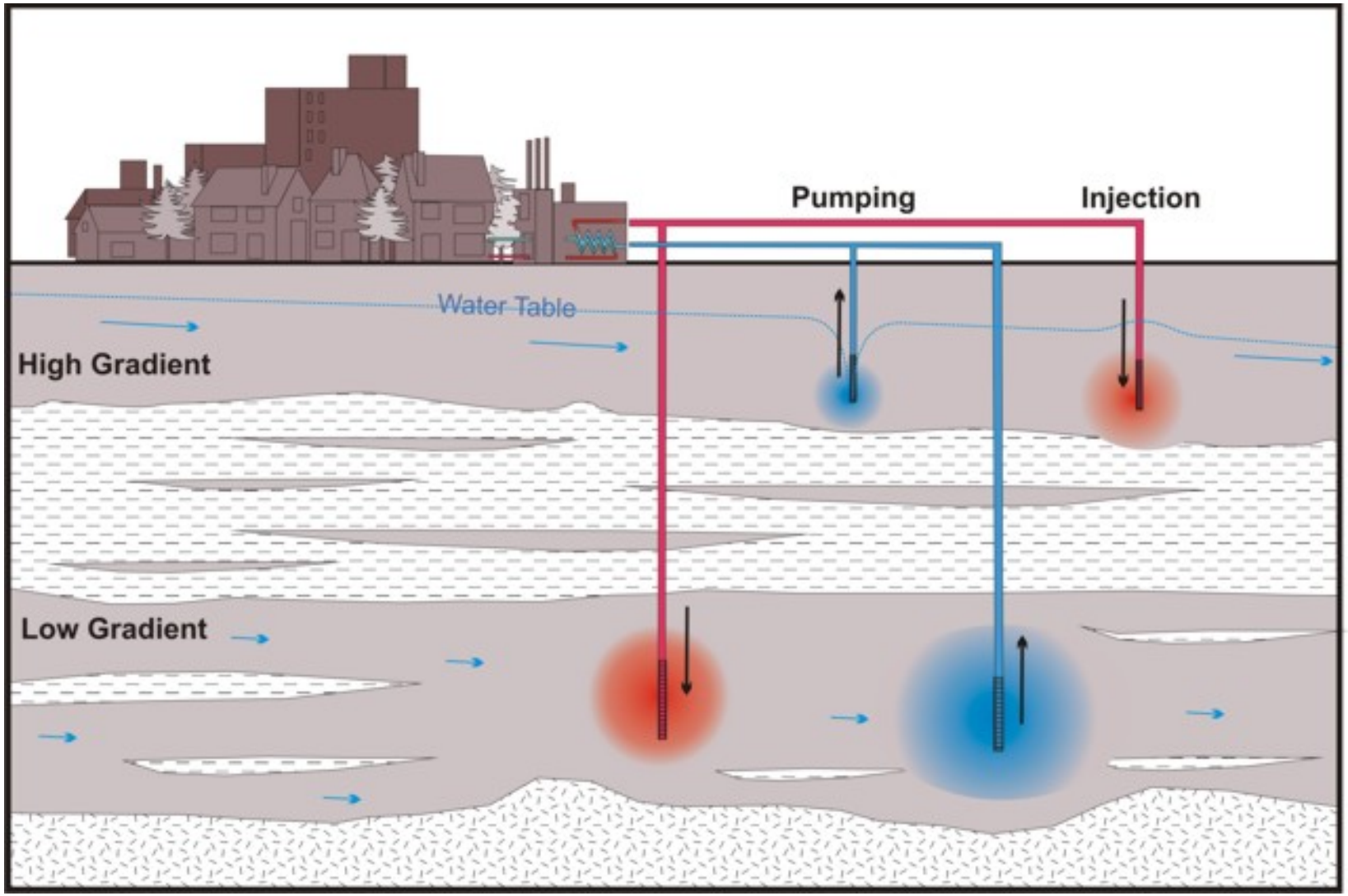
Aquifer Thermal Energy Storage (ATES)



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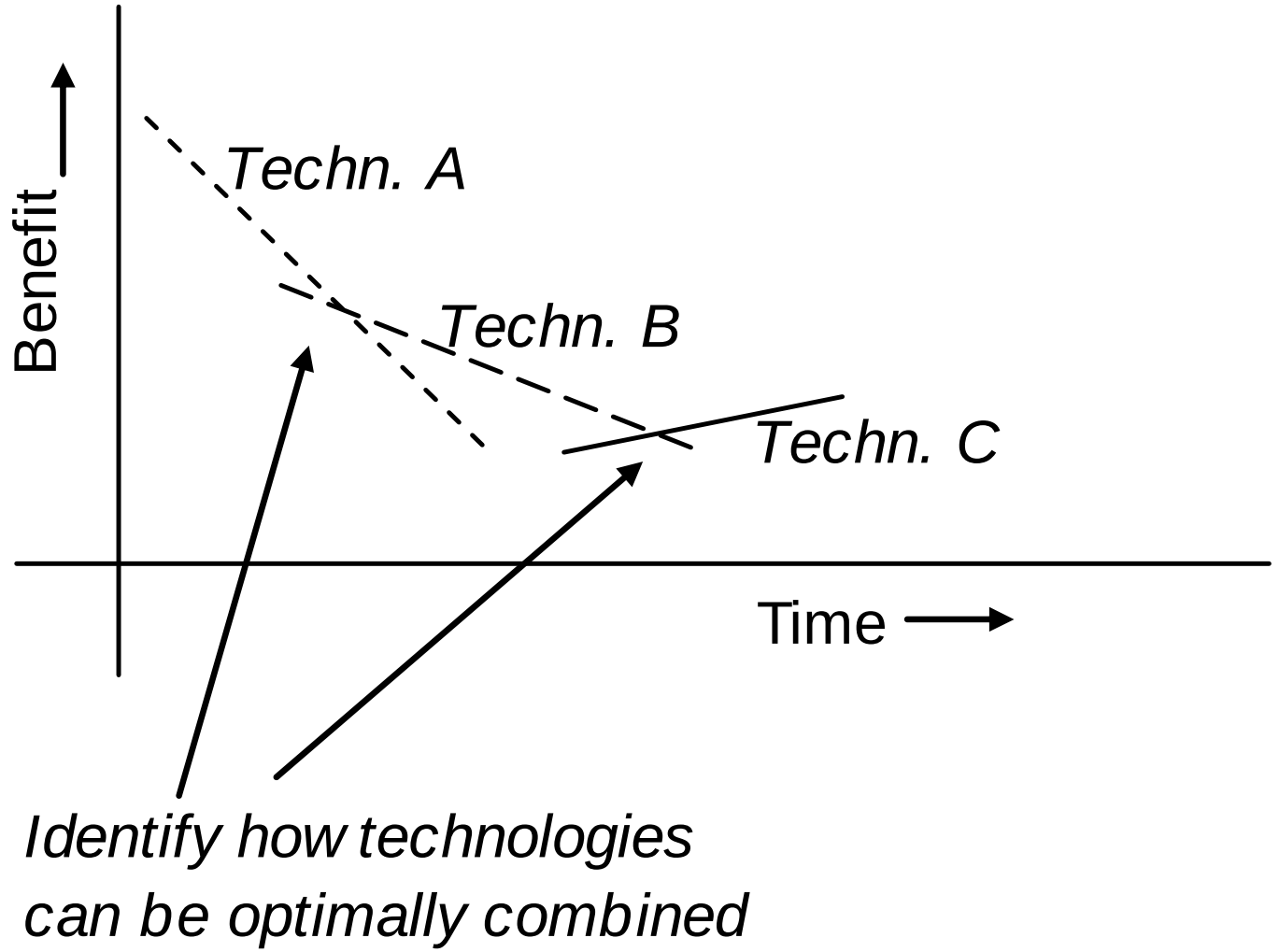
Technology Trains



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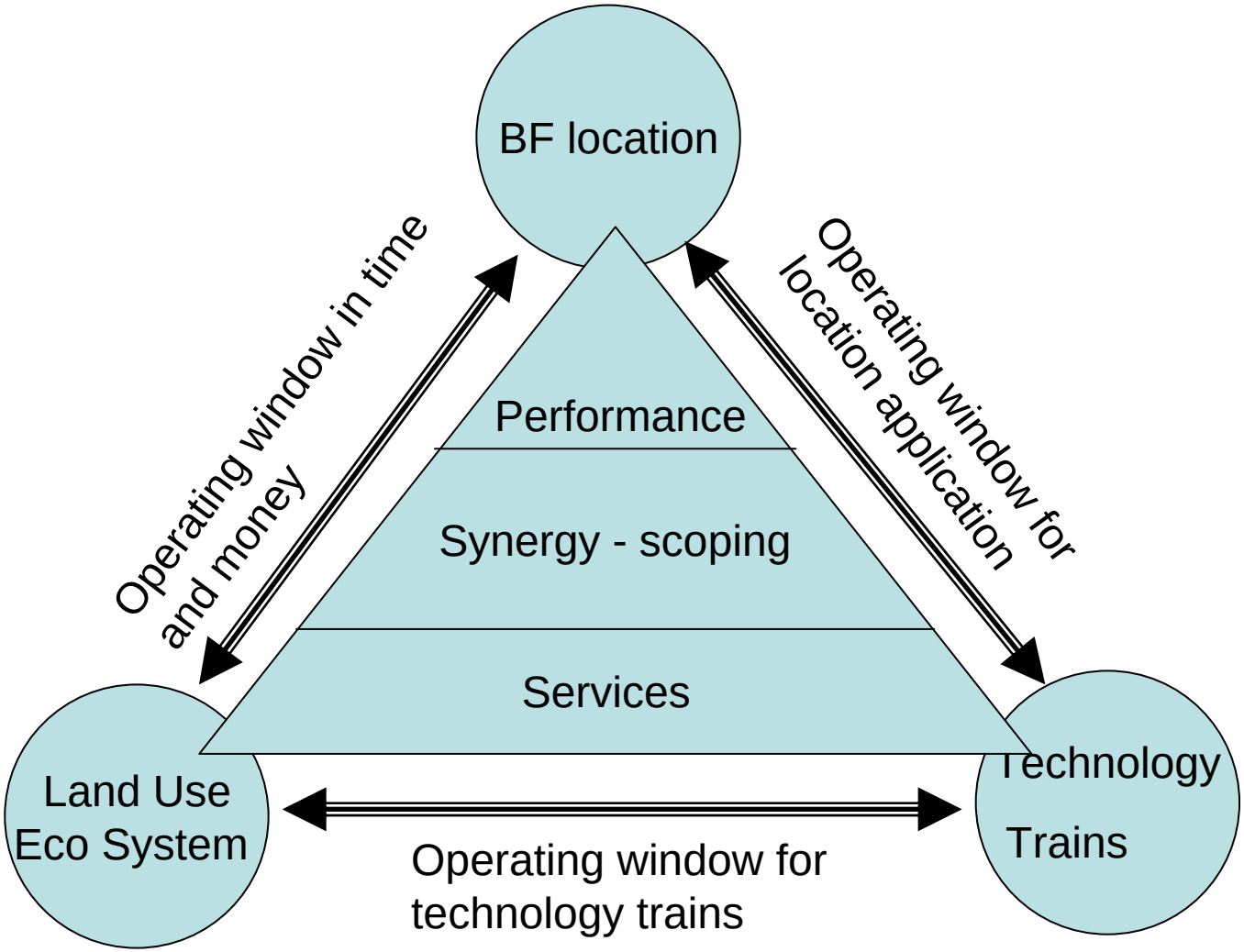
Wanted: Synergy



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BF re-use

Examples of soft end uses include:

- unchanged use because of the ecological value of the site,
- adapted use on sites that offer a basis for touristic or leisure related activities,
- use as community asset such as parkland,
- return to agricultural production or forestry (e.g. urban farms and urban woodland),
- interim or final use for the production of renewable resources (biomass, solar power, wind power…).
- interim recovery of land before urban development.

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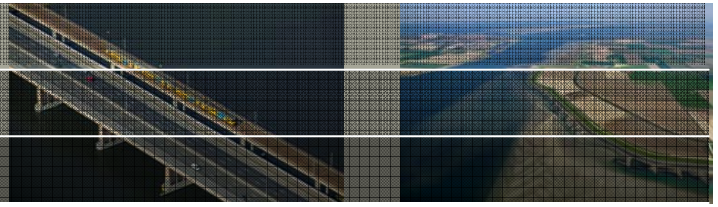
Cases



- Solec Kujawski (Kuiavia-Pomerania Region) – Poland
- Vercelli (Piemonte)- Italy
- Polcevera river delta, Genoa – Italy
- Turceni – Jiu, Romania
- Gelsenkirchen, Germany
- Halle/Saale, Germany
- Rejuvenate II: Crop Based Systems for Sustainable Risk Based Land Management for Economically Marginal Degraded Areas, Phase II

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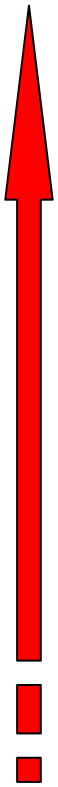
Success rate

Success rate	Goals
MAXIMUM  MINIMUM	**WIDER IMPLEMENTATION in OTHER SITES:** • Implementation of HOMBRE products in business plans of **OTHER SITES**
	IMPLEMENTATION in HOMBRE CASES: Implementation of HOMBRE products in the regeneration plans and related business plans of the **HOMBRE** • **CASE SITES** – HOMBRE products applied in the actual regeneration processes of these sites.
	DISSEMINATION: Wide dissemination of the HOMBRE results and products via the pathways: • ConSoil conferences • Symposia via existing networks: NICOLE, CABERNET, Common Forum, • Training and learning material HOMBRE website • CEN Workshop • Networking

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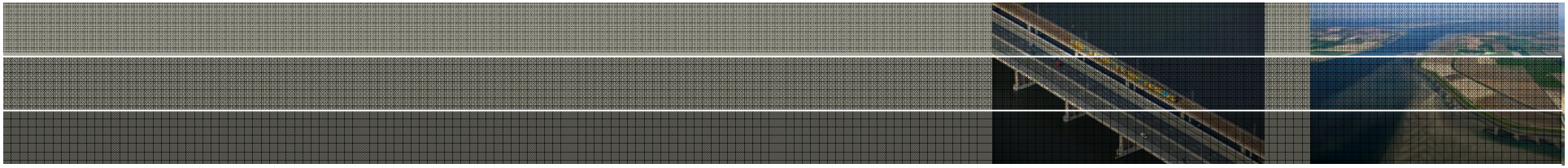

Questions Please!

Contact: hans.vanduijne@deltares.nl